Hepatitis A

Report immediately only if in institutional setting

December 2003

1) THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Hepatitis A is caused by the hepatitis A virus (HAV), a RNA virus in the picornavirus family.

B. Clinical Description and Laboratory Diagnosis

The onset of hepatitis A is usually abrupt, with fever, malaise, anorexia, nausea and abdominal discomfort; some individuals may experience diarrhea. Jaundice (yellowing of the skin and sclera), dark urine and clay-colored stool may follow a few days later. The clinical manifestations of infection vary from completely asymptomatic (common in young children) to disabling illness lasting several months. Generally, symptom severity increases with increasing age. The duration of a typical course of hepatitis A is several weeks. Prolonged, relapsing hepatitis for up to 1 year occurs in about 15% of cases. Hepatitis A is rarely fatal and has no chronic carrier state. The elderly and persons with chronic liver disease are at greater risk of fulminant hepatitis A. Hepatitis A is clinically indistinguishable from other types of hepatitis.

Laboratory diagnosis is based on presence of IgM antibodies against hepatitis A virus and elevation of liver enzymes (AST and ALT). IgM antibody can persist for some months, far beyond acute stage and convalescence of infection. Only combination of clinical symptoms, elevated liver enzymes, and positive IgM test is diagnostic for hepatitis A. In asymptomatic person with elevated IgM abnormal level of liver enzymes confirms acute hepatitis A.

C. Reservoirs

Humans with active infections (symptomatic or not) are the reservoir for this disease. Rarely, non-human primates can serve as a reservoir.

D. Modes of Transmission

The principal mode of transmission is direct or indirect person-to-person spread via the fecal-oral route. Persons become infected by ingesting the virus. This can happen in a variety of ways: ready-to-eat or uncooked food (sandwiches, salads, ice cream, strawberries, etc.) can become contaminated by an infected food worker with poor hygiene; inadequate treatment of fecally-contaminated drinking water; contaminated produce (such as lettuce or strawberries irrigated or processed with contaminated water); shellfish harvested from fecally contaminated waters and then consumed raw or undercooked; and by direct person-to-person contact, including sexual contact (*e.g.*, oral-anal contact). Bloodborne transmission, although rare, can occur during the viremic phase of the disease.

E. Incubation Period

The incubation period for hepatitis A ranges from 15–50 days, with an average of 28–30 days.

F. Period of Communicability or Infectious Period

Individuals are usually most infectious from 1–2 weeks before their symptoms begin to about 1 week after. Viral shedding in the stool is greatest during the 2 weeks before symptom onset.

G. Epidemiology

Hepatitis A has a worldwide distribution and occurs as sporadic cases and outbreaks. In countries where sanitation is poor, infection is common and occurs at an early age. Adults, therefore, are usually immune and outbreaks are uncommon. In developed countries, disease transmission is a problem in daycare settings with diapered children in attendance, among household and sexual contacts of acute cases, and among travelers to countries where the disease is common. Approximately 340 cases of hepatitis A are reported annually to New Jersey Department of Health and Senior Services (NJDHSS).

2) REPORTING CRITERIA AND LABORATORY TESTING SERVICES

A. New Jersey Department of Health and Senior Services (NJDHSS) Case Definition

CASE CLASSIFICATION

A. CONFIRMED

A clinically compatible case with discrete onset of illness and jaundice or elevated serum aminotransferase levels, **AND**

- Demonstration of immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV) in the blood**.**

B. PROBABLE

- A clinically compatible case that is epidemiologically linked to a confirmed case.

C. POSSIBLE

Not used.

Note: See Section 3 C below for information on how to report a case.

B. Laboratory Testing Services Available

The Public Health and Environmental Laboratories (PHEL) will accept appropriate specimens for serological testing for the presence of antibody to hepatitis A. The testing currently being offered at PHEL for hepatitis A is a semi-quantitative kit assay, which tests for total antibody (IgG and IgM) to the virus. Current or ongoing infections may be detected using this kit if sequential patient specimens (acute, convalescent) are provided.

3) DISEASE REPORTING AND CASE INVESTIGATION

A. Purpose of Surveillance and Reporting

- To identify whether the case may be a source of infection for other persons (*e.g.*, a diapered child, day care attendee or foodhandler) and if so, to prevent further transmission.
- To identify sources of public health concern (*e.g.*, a salad bar prepared by an infectious foodhandler) and to stop transmission from such a source.

B. Laboratory and Healthcare Provider Reporting Requirements

The New Jersey Administrative Code (N.J.A.C. 8:57-1.8) stipulates that laboratories report (by telephone, confidential fax, over the Internet using the Communicable Disease Reporting System [CDRS] or in writing) all cases of hepatitis A infection to the local health officer having jurisdiction over the locality in which the patient lives, or, if unknown, to the health officer in whose jurisdiction the health care provider requesting the laboratory examination is located. The health care providers must report all cases of hepatitis A to the local health officer having jurisdiction over the locality in which the patient lives.

Note: Due to potentially serious public health implications, it is requested that hepatitis A cases **when they occur in institutional setting be reported immediately** to the local health department where diagnosed.

C. Local Department of Health Reporting and Follow-Up Responsibilities

1. **Reporting Requirements**
The New Jersey Administrative Code (N.J.A.C.8: 57-1.8) stipulates that each local health officer must report the occurrence of any case of hepatitis A, as defined by the reporting criteria in Section 2, A. above. Current requirements are that cases be reported to the NJDHSS Infectious and Zoonotic Diseases Program (IZDP) using a CDS-1 form. A report can be filed electronically over the Internet using confidential and secure CDRS.

2. **Case Investigation**
   a. It is the local health officer's responsibility to investigate the case by interviewing the case and others who may be able to provide pertinent information and report the case to the NJDHSS IZDP using a CDS-1 form. Much of the information required on the form can be obtained from the case's healthcare provider or the medical record.

   b. The main objective in following up a case of hepatitis A is to determine whether the case is likely to have transmitted his/her infection to others, including situations where a case is identified as a foodhandler, patient care provider or employee at a child care setting.

   c. Use the following guidelines to investigate a case:
      1) Accurately record the demographic information, date of symptom onset, symptoms, and medical information.
      2) Because a case of hepatitis A is most infectious in the two weeks before symptom onset, be sure to accurately record the date of the onset of illness and symptom information. If symptom onset is unclear, use the date when jaundice was first noticed. If no symptoms were noted, the date when the tested blood was drawn should be used as the date of onset for control purposes.
      3) When asking about exposure history (food, travel, activities, etc.), use the incubation period range for hepatitis A (two to seven weeks).
      4) If possible, record any restaurants or social gatherings at which the patient ate, including food item(s) and date consumed.
      5) Ask questions about travel history and outdoor activities to help identify potential source where the patient became infected.
      6) Ask questions about household/close contact.
      7) Using the incubation period for hepatitis A (two to seven weeks), ask the case about foodhandling, supervised care settings, and other exposures during the incubation period before the illness started. Keeping in mind that up to 12% of positive tests for IgM HAV are not indicative of an acute case always check if patient has any symptoms indicative of recent HAV infection, check if she/he was immunized against hepatitis A or had a history of past infection.
      8) Determine whether the patient attends or works at a daycare facility and/or is a food handler. If so, appropriate control measures need to be instituted. (See Isolation and Quarantine Requirements in Section 4A below.)
      9) **List the names of contacts requiring prophylaxis** (see Section 4B regarding the identification of close contacts).
      10) If there have been several unsuccessful attempts to obtain patient information (*e.g.*, the patient or healthcare provider does not return calls or respond to a letter, or the patient refuses to divulge information or is too ill to be interviewed), please fill out the form with as much information as possible. Please note on the form the reason why it could not be filled out completely.
      11) **If CDRS is used to report the case, the exposure, travel, employment and contact information can be recorded in the "Comments" section.**

After completing the case report form, attach lab report(s) and mail (in an envelope marked "Confidential") to the NJDHSS IZDP or the report can be filed electronically over the Internet using the confidential and secure CDRS. The mailing address is:

NJDHSS
Division of Epidemiology, Environmental and Occupational Health
Infectious and Zoonotic Diseases Program
P.O. Box 369
Trenton, NJ 08625-0369

e. Institution of disease control measures is an integral part of case investigation. It is the local health officer's responsibility to understand, and, if necessary to institute, the control guidelines listed below in Section 4, "Controlling Further Spread."

4) CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements (N.J.A.C. 8:57-1.12)

Minimum Period of Isolation of Patient
Until end of febrile period or one week after onset of symptoms.

Minimum Period of Quarantine of Contacts
No restrictions except for foodhandling facility employees, who shall be excluded from their occupations for 28 days unless they receive a prophylactic dose of immune globulin (IG) within 14 days of exposure. The exception to this exclusion is if documentation of HAV vaccination can be produced or serologic immunity to HAV demonstrated. Receipt of IG will not interfere with subsequent serologic tests for HAV.

Note: A foodhandler is any person directly preparing or handling food. This can include a patient care or child care provider. See the Glossary for a more complete definition.

B. Protection of Contacts of a Case

For public health intervention, a case is considered to be infectious for 14 days before the onset of symptoms to 7 days after onset of symptoms. Fecal shedding of the virus peaks during the week before onset of symptoms. Control measures are implemented through the administration of IG to the people who had contact (see definition of contact directly below) with the case during their infectious period. IG should be administered as soon as possible after exposure and is 80–90% effective in preventing hepatitis A if administered within 14 days of exposure.

A *contact* is defined as:

- All household members
- Sexual contacts
- Anyone who shared food or eating or drinking utensils with a case
- Anyone consuming ready-to-eat foods prepared by an infectious food worker with diarrhea

C. Managing Special Situations

Daycare

If a confirmed case of hepatitis A occurs in a childcare setting, parents and staff must be notified. Sample notification letters can be found in the Appendix A. Hepatitis fact sheets should also be sent with the letter. Control of hepatitis A in childcare settings include the following steps:

- When the case is an employee or child enrolled in a center in which all children are older than 2 years and all are toilet-trained, IG is recommended for employees in contact with the case and for children in the same room as the case.
- When an HAV infection is identified in an employee or a child or in the household contacts of two of the enrolled children in a daycare center where children are not yet toilet trained, IG is recommended for all employees and all enrolled children in the facility. During the 6 weeks after the last case is identified, new employees and children should also receive IG.
- Strictly enforce policies about handwashing (with children and staff) and disinfecting objects and environmental surfaces with appropriate bleach solutions.
- Make sure all parents and staff notify the program if any person in their household is diagnosed with hepatitis A.
- If a household member is confirmed with hepatitis A, the child or staff member living there should get a blood test to see if he or she has the illness as well. If the test is negative, he or she should receive IG. If the test is positive for hepatitis A IgM, exclude as described below.

  Exclusion Guidelines
  - Exclude children or staff with symptoms.
  - Exclude people exposed to hepatitis A in the past 2 weeks, unless they receive a prophylactic dose of IG within 14 days of exposure, or prove immunity through proof of vaccination or serology indicating previous disease.
  - People excluded can return 6 weeks after the last case occurs.
  - People who are sick with hepatitis A can return to the program no less than one week after the illness started, if their fever and jaundice are gone.

School

Hepatitis A occurring in a school setting usually does not pose a significant risk of transmission and IG is usually not indicated. However, IG may be given to those who have personal contact with a case during the case's infectious period (*e.g.,* sharing food or eating or drinking utensils with a case). If a case of hepatitis A occurs in a kindergarten or preschool class, or a class where hygiene may not be optimal, more stringent control measures may be needed. Please refer to the Daycare section above.

- Strictly enforce handwashing and cleanliness policies and ensure that all bathrooms are properly supplied with soap, paper towels, and toilet paper.
- Request that all parents and staff notify the school if any person in their household is diagnosed with hepatitis A.

Community Residential Programs

Actions taken in response to a case of hepatitis A in a community residential program should be handled on a case-by-case basis. Management of contacts will depend on the level of hygiene of the case and the type of facility. Roommates and anyone sharing food or eating or drinking utensils should be considered household contacts and should be given IG within 14 days of exposure. If hepatitis A occurs in a staff member of a residential program, the case should be considered a foodhandler if there was an opportunity to feed, distribute

medication, prepare foods or perform dental procedures during the 2 weeks prior to symptom onset. Consult with the NJDHSS IZDP.

Infected Foodhandler
A confirmed case of hepatits A in a foodhandler is a serious event and requires that risk for both co-workers and the public be assessed as quickly as possible. If a foodhandler is a laboratory-confirmed case of hepatitis A, all other foodhandling employees in the facility must receive IG within two weeks of exposure. Unless the foodhandling facility employee contacts can produce documentation of HAV vaccination or can show serologic immunity to HAV, they must be excluded from work for 28 days if they do not receive IG within 2 weeks of exposure. The same exclusion criteria apply to *any* foodhandling contacts of *any* confirmed case. See Section 4 A, Isolation and Quarantine Requirements, above). In order to determine if the public needs to be notified of possible exposure to HAV, a complete foodhandling history of the case for the 2 weeks before symptom onset needs to be reviewed. This review should include dates worked, job duties, foods prepared and whether gloves or other barrier protection were used by the foodhandler. Consult with NJDHSS IZDP. The Program staff can help determine a course of action to prevent further cases and can perform surveillance for cases that may cross several town lines and therefore be difficult to identify at a local level.

Because common-source transmission to patrons is unlikely, IG administration to patrons is usually not recommended, but can be considered if:

- during the time when the foodhandler was likely to be infectious, the foodhandler both directly handled foods, served uncooked or foods after cooking, and had diarrhea or poor hygienic practices; *and*
- patrons can be identified and treated within 2 weeks after the exposure.

In settings where repeated exposures to HAV might have occurred (*e.g.*, institutional cafeterias) stronger consideration of more widespread IG use might be warranted.

Hospitals
Administration of IG to hospital personnel caring for infected patients is not routinely indicated unless an outbreak is occurring. However, if a hospital staff member is diagnosed with hepatitis A and is considered a foodhandler (see the Glossary for a more complete definition) then the foodhandler guidelines must be followed. See Section 4 A, Isolation and Quarantine Requirements, above.

Reported Incidence Is Higher than Usual/Outbreak Suspected
If the number of reported cases of hepatitis A in city/town is higher than usual, or if an outbreak is suspected, investigate clustered cases in an area or institution to determine source of infection and mode of transmission. If foodborne outbreak is suspected use the Patient Food History Listing, Patient Symptoms Line Listing and Food-Specific Attack Rate Forms. A common vehicle (such as food or association with a daycare center) should be sought and applicable preventive or control measures should be instituted. Control of person-to-person transmission requires special emphasis on personal cleanliness and sanitary disposal of feces. Consult with the NJDHSS IZDP. The Program staff can help determine a course of action to prevent further cases and can perform surveillance for cases that may cross several jurisdictions and therefore be difficult to identify at a local level.

D. Preventive Measures

Personal Preventive Measures/Education
Hepatitis A infection provides lifelong immunity. In general, however, individuals can avoid exposure to the virus by:

- Washing hands thoroughly with soap and water, especially before handling or eating food, after toilet use, and after changing diapers.
- In daycare or residential programs, disposing of feces in a sanitary manner.

- Avoid sexual practices that may permit fecal-oral transmission. Latex barrier protection should be emphasized as a way to prevent the spread of HAV to a case's sexual partners as well as being a way to prevent exposure to and transmission of other pathogens.
- Consider vaccination of those at high-risk of contracting hepatitis A. New Jersey residents who should be vaccinated include the following:
  - Persons ($\geq$ 2 years of age) traveling to or working in countries with high or intermediate rates of hepatitis A, such as Central or South America, the Caribbean, Mexico, Asia (except Japan), Africa, and southern or eastern Europe. The vaccine series should be started at least one month before traveling.
  - Men who have sex with men.
  - Illegal drug users, whether injecting or not.
  - Persons with chronic liver disease (not just infection), including those who are awaiting or have received liver transplants.
  - Persons who receive clotting factor concentrates.
  - Persons who have occupational risk for infection; specifically, those who work with HAV-infected primates or with HAV in a research laboratory setting. Sewage workers do not need to be vaccinated.

  Note: According to 1999 ACIP recommendations, the current incidence of hepatitis A in New Jersey communities does not warrant routine childhood vaccination. If a major outbreak occurs in a community or larger area, NJDHSS may determine, based on local epidemiologic data and ACIP guidelines, that mass vaccination of certain groups is warranted.

International Travel

Travelers to areas where hepatitis A is endemic should receive IG before travel under the following circumstances:

- if they are allergic to a component of the vaccine or elect not to receive vaccine
- if they are less than 2 years old (vaccine is not licensed for this age group)
- if they are traveling to an endemic area in less than 4 weeks, they may receive vaccine and IG at the same time (in different anatomical sites).

In addition, travelers should pay attention to what they eat and drink. This is extremely important, because the vaccine is not 100% effective and immunity from IG wears off with time. Taking precautions such as those listed below will help prevent other illnesses as well, including travelers' diarrhea, cholera, dysentery, and typhoid fever.

Recommendations to travelers include:

- "Boil it, cook it, peel it, or forget it."
- Drink only bottled or boiled water, keeping in mind that bottled carbonated water is safer than uncarbonated water.
- Ask for drinks without ice unless the ice is made from bottled or boiled water.
- Avoid popsicles and flavored ices that may have been made with contaminated water.
- Eat foods that have been thoroughly cooked and are still hot and steaming.
- Avoid raw vegetables and fruits that cannot be peeled. Vegetables like lettuce are easily contaminated and are very hard to wash well.
- Peel their own raw fruits or vegetables and do not eat the peelings.
- Avoid foods and beverages from street vendors.

For more information regarding international travel and hepatitis A, contact the CDC's Traveler's Health Office at (877) 394-8747 or through the Internet at www.cdc.gov/travel.

ADDITIONAL INFORMATION

A *Hepatitis A Fact Sheet* can be obtained at the NJDHSS website <http://www.state.nj.us/health>. Click on the "Topics A to Z" link and scroll down to the subject *Hepatitis A.*

The formal CDC surveillance case definition for hepatitis A is the same as the criteria outlined in Section 2 A of this chapter. CDC case definitions are used by state health departments and CDC to maintain uniform standards for national reporting. For reporting to the NJDHSS, always refer to Section 2 A.

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